

ABSTRACT

A high-voltage direct current cable insulation is made from a blend which includes an ethylene copolymer, such as ethylene-alpha olefin copolymer, with low crystallinity to reduce physical space charge trapping sites, a polar polymer modifier in an effective amount to enhance local conductivity to leak space charge quickly when local stress is enhanced, and an ion scavenger to stabilize or neutralize the space charge to provide a composition which is an effective high- voltage DC cable insulation. A high-voltage direct current cable semiconductive shield is made from a blend that includes an ethylene copolymer, a carbon black having a low level of ionic species, a polar polymer modifier, and an ion scavenger.